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V03 ME  
S-2-02

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: James A. Patterson

Serial No. 09/766,513

Filed: 01/19/2001

For: Composition for Arresting the Flow  
of Blood and Method

Examiner: Frank I Cho

Group Art Unit: 1616

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RESPONSE

To: Commissioner of Patents and Trademarks  
Box No Fee Amendments  
Washington, D.C. 20231

Sir:

This response is submitted following receipt of the Notice of Non-Compliant Amendment mailed March 15, 2002.

Please enter in the enclosed marked-up version of the replacement paragraph/section and the enclosed clean version of the replacement paragraph/section and the clean version of the amended claims all as required in 37 CFR 1.121.

Respectfully submitted,

Charles J. Prescott  
Reg. No. 30,316  
Charles J. Prescott, P.A.  
2033 Wood Street, Suite 115  
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CERTIFICATE OF MAILING

I HEREBY CERTIFY that the foregoing is being deposited in the U.S. Mail, first class postage paid, addressed to the Assistant Commissioner of Patents, Box No Fee Amendments, Washington, D.C. 20231, this April 5, 2002.

  
Charles J. Prescott

In U.S. Patent 4,616,644, Saferstein, et al. teaches the use of an adhesive bandage with high molecular weight polyethylene oxide applied to the surface of the perforated plastic film wound release cover of the bandage to arrest blood flow from minor cuts. Yet another hemostatic agent including a carrier in the shape of a flake or fiber having thrombin and Factor XIII affixed thereto is taught by Sakamoto in U.S. Patent 4,655,211. The use of an ultra-pure, clean thrombin solution as a hemostatic agent is taught in U.S. Patent 5,525,498 invented by Boctor. Two recent patents invented by Pruss, et al., U.S. 5,643,596 and 5,645,849 both teach the use of hemostatic dressings which incorporate thrombin and epsilon aminocaproic acid (EACA) and calcium chloride on gelatin.

An absorbable spun cotton-like topical hemostat is taught by Shimuzu, et al. in U.S. Patent 5,679,372. This disclosure is directed to an absorbable dressing made of acetocollagen fibers which are innately adhesive to a bleeding surface. In a patent to Bell, et al, U.S. 5,800,372, a dressing made of microfibrillar collagen and a superabsorbant polymer provides both blood absorption and clotting inducement.

A previous U.S. patent 6,198,347 co-invented by James A. Paterson and J. A. Thompson, also co-inventors of the present case, teaches utilizing an improved ion exchange resin, preferably in the form of a styrene divinylbenzene copolymer which has been sulfonated. The collective teaching of making this prior art resin is to be found in an earlier patent to co-inventor, Patterson, U.S. 4,291,980. This manufacturing method disclosed in the '980 patent was based at least in part on the production of spherical beads comprised of copolymer styrene and divinylbenzene as taught in U.S. Patents 2,366,007 and 3,463,320. An improvement better adapting this resin to the present invention is in the form of substantially reduced cross-linking down to about 0.25%.

In U.S. Patent 4,616,644, Saferstein, et al. teaches the use of an adhesive bandage with high molecular weight polyethylene oxide applied to the surface of the perforated plastic film wound release cover of the bandage to arrest blood flow from minor cuts. Yet another hemostatic agent including a carrier in the shape of a flake or fiber having thrombin and Factor XIII affixed thereto is taught by Sakamoto in U.S. Patent 4,655,211. The use of an ultra-pure, clean thrombin solution as a hemostatic agent is taught in U.S. Patent 5,525,498 invented by Boctor. Two recent patents invented by Pruss, et al., U.S. 5,643,596 and 5,645,849 both teach the use of hemostatic dressings which incorporate thrombin and epsilon aminocaproic acid (EACA) and calcium chloride on gelatin.

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Original  
5  
X

A method of arresting the flow of blood from a bleeding wound comprising the steps of:

- A. providing an effective amount of a substantially anhydrous compound of an oxyacid salt combined with an effective amount of hydrophilic proton donor which will hydrate in the presence of blood to thereby promote clotting of the blood;
- B. applying said compound to the wound for a time sufficient to effect sufficient clotting of the blood to arrest substantial further blood flow from the wound.

Amended  
6  
X

The method of arresting the flow of blood as set forth in Claim 1, wherein said oxyacid salt is taken from the group consisting of:

alkali and alkaline salts;

oxyacid salts of transition elements;

halogen oxyacids; and

alkali and alkaline oxides, peroxides and superoxides.

Original  
7  
X

A hemostatic agent adapted to be applied directly onto a bleeding wound comprising:

an effective amount of an oxyacid salt combined with an effective amount of a hydrophilic proton donor material, said oxyacid salt combining with blood to promote blood clotting at the wound, said hydrophilic proton donor material combining with, and thereby neutralizing, hydroxyl ions formed as said oxyacid salt combines with blood to effect clotting.

Amended 8

The hemostatic agent as set forth in Claim 3, wherein said oxyacid salt is taken from the group consisting of:

alkali and alkaline salts;

oxyacid salts of transition elements;

halogen oxyacids; and

alkali and alkaline oxides, peroxides and superoxides.

Amended 9

A hemostatic agent as set forth in Claim 3, wherein said hydrophilic proton donor includes:

a cation exchange resin;

an acid producing salt; and

an organic acid.

Amended 10

The hemostatic agent as set forth in Claim 3, further comprising:

a solid desiccant combined with said oxyacid salt and said hydrophilic proton donor material, said solid desiccant further accelerating blood clotting by absorbing water in the blood.

Original 11

A hemostatic agent adapted to be applied directly onto a bleeding wound comprising:

an effective amount of an oxyacid salt combined with an effective amount of a hydrophilic polymer material, said oxyacid salt combining with blood to promote blood clotting at the wound, said hydrophilic polymer material forming a protective cover over the wound.

Amended  
8 12

The hemostatic agent as set forth in Claim 7, wherein said oxyacid salt is taken from the group consisting of:

alkali and alkaline salts;

oxyacid salts of transition elements;

halogen oxyacids; and

alkali and alkaline oxides, peroxides and superoxides.

Amended  
9 13

9. The hemostatic agent as set forth in Claim 8, wherein said hydrophilic polymer material includes:

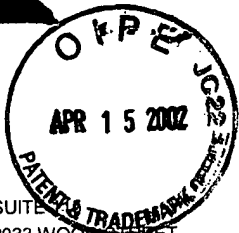
carboxy methylcellulose;

polyvinyl alcohol;

alginate;

a soluble gum.

1616



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April 5, 2002

Assistant Commissioner for Patents  
Box Amendment No Fee  
Washington, D.C. 20231

Re: Applicant: James A. Patterson  
Serial No. 09/766,513  
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For: Composition for Arresting the Flow...  
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Sir:

*In response to the Examiner's Notice of Non-Compliant Amendment mailed March 15, 2002, please enter the enclosed response and marked-up version and clean version of the amended claims in the official file of this application.*

*It is my understanding that no fee is required to enter this response; however you are authorized to deduct any underpayment from deposit account No. 16-2454.*

*Thank you for your cooperation in this matter.*

Sincerely,

  
Charles J. Prescott

CJP:mm  
Enclosures